

CLAIMS

1. An antenna, comprising:
a PIFA for wireless operation within at least one frequency band; and
5 a parasitic element positioned to be operatively coupled to the PIFA, and
wherein RF energy is radiantly coupled between the parasitic element and the PIFA,
and the parasitic element is configured and positioned so as to further induce wireless
operation of the PIFA within at least one additional frequency band.
- 10 2. The antenna of claim 1, wherein the parasitic element radiantly couples to at
least three arms of the PIFA.
3. The antenna of claim 1, wherein the parasitic element has a shape that
generally conforms to the shape of the PIFA.
- 15 4. The antenna of claim 1, wherein the parasitic element comprises a meandering
section.
5. The antenna of claim 1, wherein the parasitic element conforms to a surface
20 that is separated from the PIFA.
6. The antenna of claim 5, wherein the surface comprises at least a portion of a
case of a wireless communications device.

7. A parasitic element for use with a PIFA antenna that is for wireless operation within at least one frequency band, the parasitic element comprising:

at least two conductors arranged so as to radiantly couple RF energy between
5 the parasitic element and the PIFA antenna,

wherein the parasitic element is configured and positioned relative to the PIFA antenna so as to further induce wireless operation of the PIFA antenna within at least one additional frequency band.

10 8. A method comprising:

parasitically inducing a radiation characteristic of a PIFA antenna, that wirelessly operates within at least one frequency band, resulting in wireless operation thereof within at least one additional frequency band by radiantly coupling RF energy with the PIFA antenna.

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9. The method according to claim 8, wherein the parasitically inducing comprises:

positioning a parasitic element so as to be operatively coupled to the PIFA antenna so as to induce the radiantly coupling of RF energy between the PIFA
20 antenna and the parasitic element, wherein the positioning contributes to the parasitically inducing.

10. The method according to claim 9, wherein the positioning comprises placing the parasitic element about a surface that is separated from the PIFA antenna.

11. The method according to claim 9, wherein the parasitic element has a shape
5 that generally conforms to the shape of the PIFA antenna.

12. The method according to claim 9, wherein the parasitic element comprises a meandering section so as to further induce radiation characteristics of the PIFA antenna in an additional plurality of bands.

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13. The method according to claim 9, wherein the parasitic element conforms to a surface that is separated from the PIFA antenna.

14. The method according to claim 13, wherein the surface comprises at least a
15 portion of a case of a wireless communications device.

15. A wireless communications device, comprising:

at least one of a receiver for wirelessly receiving transmitted signals and a transmitter for wirelessly transmitting signals;

5 a PIFA antenna, electrically coupled to the at least one of a receiver and a transmitter, for wireless operation within at least one frequency band; and

a parasitic element, positioned so as to be operatively coupled to the PIFA antenna, for radiantly coupling RF energy between the parasitic element and the PIFA antenna, the parasitic element being configured and positioned so as to further induce radiation of the PIFA antenna within at least one additional frequency band.

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16. The wireless communications device of claim 15, wherein the parasitic element has a shape that generally conforms to the shape of the PIFA antenna.

17. The wireless communications device of claim 15, wherein the parasitic
15 element comprises a meandering section.

18. The wireless communications device of claim 15, wherein the parasitic element conforms to a surface that is separated from the PIFA.

20 19. The wireless communications device of claim 18, wherein the surface comprises at least a portion of a case of the wireless communications device.